

**Amendments to the Claims:**

This listing of claims will replace all prior versions of the claims in this application:

**Listing of Claims:**

**Claim 1 (currently amended):** A radio frequency (RF) coil array for use in resonance imaging and/or analysis of a subject located within a space in which a magnetic field is operatively applied in a first direction, the coil array comprising a plurality of coil elements angled relative to each other and electrically separate from each other, each coil element having a pair of main conductors extending generally parallel to the direction of the magnetic field and located on opposite sides of the space, and a pair of connection conductor ~~conductors~~ connected between respective ends of the main conductors.

**Claim 2 (original):** A coil array as claimed in claim 1, wherein the space is a cylindrical space and the main conductors extend axially and are located diametrically opposite each other.

**Claim 3 (currently amended):** A coil as claimed in claim 2, wherein the coil elements are angularly spaced about the axis of the cylindrical space~~[[,]]-and are each located in a respective diametric plane of the cylindrical space.~~

**Claim 4 (original):** A coil array as claimed in claim 3, wherein the coil elements are equi-angularly spaced, the angle between adjacent coils being  $360/N$ , where N is the number of coil elements in the array.

**Claim 5 (currently amended):** A coil array as claimed in claim 2, wherein ~~at least one~~ the connection conductor extends around the periphery of the cylindrical space at a ~~respective~~ an axial end thereof to thereby permit access to the cylindrical space through that end.

**Claim 6 (original):** A coil array as claimed in claim 2, wherein the coil elements are arranged in one or more orthogonal pairs.

**Claim 7 (currently amended):** Resonance imaging apparatus comprising  
a space for receiving a subject to be imaged,  
magnet means for applying a magnetic field to the space in a first direction, and  
a radio frequency (RF) coil array comprising a plurality of angularly spaced coil elements, each coil element having a pair of main conductors extending generally parallel to the direction of the magnetic field and located on opposite sides of the space, and a ~~pair of connection~~ conductor ~~conductors~~ connected between respective ends of the main conductors.

**Claim 8 (original):** Apparatus as claimed in claim 7, wherein the space is a cylindrical space and the main conductors extend axially and are located diametrically opposite each other.

**Claim 9 (currently amended):** Apparatus as claimed in claim 8, wherein the coil elements are angularly spaced around the axis of the cylindrical space ~~[[,]] and are each located in a respective diametric plane of the cylindrical space.~~

**Claim 10 (original):** Apparatus as claimed in claim 9, wherein the coil elements are equi-angularly spaced, the angle between adjacent coils being  $360/N$ , where N is the number of coil elements in the array.

**Claim 11 (currently amended):** Apparatus as claimed in claim 8, wherein ~~at least one~~ the connection conductor extends around the periphery of the cylindrical space at a ~~respective~~ an axial end thereof to thereby permit access to the cylindrical space through that end.

**Claim 12 (original):** Apparatus as claimed in claim 8, wherein the coil elements are arranged in one or more orthogonal pairs.

**Claim 13 (original):** Apparatus as claimed in claim 7, wherein each coil is used as a receiver coil, the apparatus further comprising a plurality of receiver channels each connected to a respective coil, and means for combining the signals from each coil to form a composite image.

**Claim 14 (original):** Apparatus as claimed in claim 7, wherein at least one coil is adapted to be used as both a transmitter and receiver coil.

**Claim 15 (original):** Apparatus as claimed in claim 7, wherein the coil elements are arranged in one or more orthogonal pairs, one coil element in each pair being adapted for use as a transmitter coil and the other coil element in each pair being adapted for use as a receiver coil, each orthogonal pair being sequentially active, the apparatus further comprising a receiver channel and switching means for selectively connecting the receiver channel sequentially to the receiver coil of the active orthogonal pair.

**Claim 16 (original):** Apparatus as claimed in claim 15, wherein each transmitter coil of each orthogonal pair is adapted to generate a radio frequency pulse of different amplitude and phase to the transmitter coil(s) of the other orthogonal pair(s).

**Claim 17 (currently amended):** A rotary switched RF coil array arrangement for combined parallel imaging of a subject located in a cylindrical space, the coil array arrangement comprising

a plurality of electrically separate coils spaced angularly about the axis of the cylindrical space, each coil including a pair of main conductors extending axially on diametrically opposite sides of the cylindrical space,

a receiver channel, and

switching means for selectively connecting the receiver channel sequentially to the coils.

**Claim 18 (currently amended):** A coil array arrangement as claimed in claim 17, wherein each coil has a ~~pair of~~ connection conductor ~~conductors~~ connected between respective ends of the main conductors, the connection conductor ~~conductors~~ ~~at one or both ends~~ being non-diametrical to permit access through the respective axial end of the cylindrical space.